

Pl 1162580

REC'D 10 MAY 2004

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# THE UNITED STATES OF AMERICA

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UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office

May 06, 2004

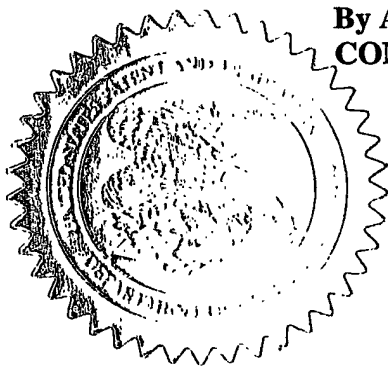
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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A  
FILING DATE.

APPLICATION NUMBER: 60/495,655

FILING DATE: August 15, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/06568

By Authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS



M. SIAS  
Certifying Officer

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PTO/SB/18 (02-01)  
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## PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

Express Mail Label N . EL 995079250 US

| INVENTOR(S)                            |                        |   |
|--|------------------------|---|
| Given Name (first and middle [if any]) | Family Name or Surname | Residence<br>(City and either State or Foreign Country) |
| Carl                                   | Christensen            | South Jordan, Utah USA                                  |

☐ Additional Inventors are being named on the next separately numbered sheets attached hereto

TITLE OF THE INVENTION (280 characters max)

BROADCAST ROUTER OPTIMIZED FOR ASYMMETRICAL CONFIGURATION

### CORRESPONDENCE ADDRESS

Direct all correspondence to:

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Individual Name

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### ENCLOSED APPLICATION PARTS (check all that apply)

☒ Specification Number of Pages

2

☐ CD(s), Number

☐ Drawing(s) Number of Sheets

☐ Other (specify)

☐ Application Data Sheet. See 37 CFR 1.76

### METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check or money order is enclosed to cover the filing fees

☒ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:

07-0832

FILING FEE  
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160

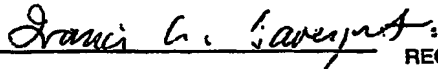
☐ Payment by credit card. Form PTO-2038 is attached.

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: \_\_\_\_\_

Respectfully submitted,  
SIGNATURE



Date

August 15, 2003

TYPED or PRINTED NAME

FRANCIS A. DAVENPORT

REGISTRATION NO.

36,316

(if appropriate)

Docket Number:

PU 0302446

TELEPHONE 609 734-6805

### USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C., 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

17613 U.S. PTO  
60/495655  
08/15/03

08/15/03

# FEE TRANSMITTAL for FY 2003

Patent fees are subject to annual revision.

Complete if Known

|                      |                  |
|----------------------|------------------|
| Application Number   | N/A              |
| Filing Date          | HEREWITH         |
| First Named Inventor | Carl Christensen |
| Examiner Name        | N/A              |
| Group / Art Unit     | N/A              |
| Attorney Docket No.  | PU 030246        |

TOTAL AMOUNT OF PAYMENT (\$ 160

## METHOD OF PAYMENT (check one)

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THOMSON multimedia Licensing Inc.

- ☒ Charge Any Additional Fee Required  
Under 37 CFR 1.16 and 1.17  
☐ Applicant claims small entity status.  
See 37 CFR 1.27

2. ☐ Payment Enclosed:

- ☒ Check ☐ Credit card ☐ Money  
Order ☐ Other

## FEE CALCULATION

### 1. BASIC FILING FEE

| Large<br>Fee<br>Code | Entity<br>Fee<br>(\$) | Small<br>Fee<br>Code | Entity<br>Fee<br>(\$) | Fee Description        | Fee Paid |
|----------------------|-----------------------|----------------------|-----------------------|------------------------|----------|
| 101                  | 740                   | 201                  | 370                   | Utility filing fee     |          |
| 106                  | 330                   | 206                  | 165                   | Design filing fee      |          |
| 107                  | 510                   | 207                  | 255                   | Plant filing fee       |          |
| 108                  | 740                   | 208                  | 370                   | Reissue filing fee     |          |
| 114                  | 160                   | 214                  | 80                    | Provisional filing fee | 160      |
| SUBTOTAL (1)         |                       |                      |                       |                        | (\$ 160  |

### 2. EXTRA CLAIM FEES

|                       |  |        |   |                 |   |                   |   |             |
|-----------------------|--|--------|---|-----------------|---|-------------------|---|-------------|
|                       |  |        |   | Extra<br>Claims |   | Fee from<br>below |   | Fee<br>Paid |
| Total Claims          |  | -20 ** | = | 0               | X |                   | = | 0           |
| Independent<br>Claims |  | -3 **  | = | 0               | X |                   | = | 0           |
| Multiple<br>Dependent |  |        |   |                 | X |                   | = | 0           |

| Large<br>Fee<br>Code | Entity<br>Fee<br>(\$) | Small<br>Fee<br>Code | Entity<br>Fee<br>(\$) | Fee Description   |
|----------------------|-----------------------|----------------------|-----------------------|---|
| 103                  | 18                    | 203                  | 9                     | Claims in excess of 20  |
| 102                  | 84                    | 202                  | 42                    | Independent claims in excess of 3                             |
| 104                  | 280                   | 204                  | 140                   | Multiple dependent claim, if not paid                         |
| 109                  | 84                    | 209                  | 42                    | ** Reissue Independent claims over<br>original patent         |
| 110                  | 18                    | 210                  | 9                     | ** Reissue claims in excess of 20 and<br>over original patent |

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

| Large<br>Fee<br>Code              | Entity<br>Fee<br>(\$) | Small<br>Fee<br>Code | Entity<br>Fee<br>(\$) | Fee Description  | Fee Paid |
|-----------------------------------|-----------------------|----------------------|-----------------------|--|----------|
| 105                               | 130                   | 205                  | 65                    | Surcharge - late filing fee or oath  |          |
| 127                               | 50                    | 227                  | 25                    | Surcharge - late provisional filing fee or cover sheet                     |          |
| 139                               | 130                   | 139                  | 130                   | Non-English specification  |          |
| 147                               | 2,520                 | 147                  | 2,520                 | For filing a request for reexamination                                     |          |
| 112                               | 920*                  | 112                  | 920*                  | Requesting publication of SIR prior to Examiner action                     |          |
| 113                               | 1,840*                | 113                  | 1,840*                | Requesting publication of SIR after Examiner action                        |          |
| 115                               | 110                   | 215                  | 55                    | Extension for reply within first month                                     |          |
| 116                               | 400                   | 216                  | 200                   | Extension for reply within second month                                    |          |
| 117                               | 920                   | 217                  | 460                   | Extension for reply within third month                                     |          |
| 118                               | 1,440                 | 218                  | 720                   | Extension for reply within fourth month                                    |          |
| 128                               | 1,960                 | 228                  | 980                   | Extension for reply within fifth month                                     |          |
| 119                               | 320                   | 219                  | 160                   | Notice of Appeal   |          |
| 120                               | 320                   | 220                  | 160                   | Filing a brief in support of an appeal                                     |          |
| 121                               | 280                   | 221                  | 140                   | Request for oral hearing   |          |
| 138                               | 1,510                 | 138                  | 1,510                 | Petition to institute a public use proceeding                              |          |
| 140                               | 110                   | 240                  | 55                    | Petition to revive - unavoidable   |          |
| 141                               | 1,280                 | 241                  | 640                   | Petition to revive - unintentional   |          |
| 142                               | 1,280                 | 242                  | 640                   | Utility issue fee (or reissue)   |          |
| 143                               | 460                   | 243                  | 230                   | Design issue fee   |          |
| 144                               | 620                   | 244                  | 310                   | Plant issue fee  |          |
| 122                               | 130                   | 122                  | 130                   | Petitions to the Commissioner  |          |
| 123                               | 50                    | 123                  | 50                    | Processing fee under 37 CFR 1.17 (q)                                       |          |
| 126                               | 180                   | 126                  | 180                   | Submission of Information Disclosure Stmt                                  |          |
| 581                               | 40                    | 581                  | 40                    | Recording each patent assignment per property (times number of properties) |          |
| 148                               | 740                   | 246                  | 370                   | Filing a submission after final rejection (37 CFR § 1.129(a))              |          |
| 149                               | 740                   | 249                  | 370                   | For each additional invention to be examined (37 CFR § 1.129(b))           |          |
| 179                               | 740                   | 279                  | 370                   | Request for Continued Examination (RCE)                                    |          |
| 169                               | 900                   | 169                  | 900                   | Request for expedited examination of a design application                  |          |
| Other fee (specify) _____         |                       |                      |                       |  |          |
| *Reduced by Basic Filing Fee Paid |                       |                      |                       |  |          |
| SUBTOTAL (3)                      |                       |                      |                       |  | (\$ 0    |

## SUBMITTED BY

Complete (if applicable)

|                   |                             |                                  |        |           |              |
|-------------------|-----------------------------|----------------------------------|--------|-----------|--------------|
| Name (Print/Type) | Francis A. Davenport        | Registration No. Attorney/Agent) | 38,316 | Telephone | 609-734-6805 |
| Signature         | <i>Francis A. Davenport</i> |                                  |        | Date      | 09/15/03     |

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### BROADCAST ROUTER OPTIMIZED FOR ASYMMETRICAL CONFIGURATION

In previous linearly expandable broadcast router architectures each chassis with both input and output cards and would usually be designed to support the same number of outputs and inputs per chassis. While the prior methods have the advantages of a single chassis being capable of providing a complete system, a new advantageous approach has offers configurations when the ratio of inputs to outputs varies significantly from a more usual one to one relationship. This approach also has advantages when constructing very large routers (routers greater than 1024 x 1024).

A novel architecture for a broadcast router. The architecture consists of input chassis and output chassis. Multiple input and output chassis are used allowing for a linear expansion of the router. Linearly expandable broadcast router architectures in the past have not handled extremely asymmetrical (many more inputs than outputs or vice versa) configurations well. Input chassis house input cards and an expansion card. Input cards receive and decode a number of incoming input streams. This data is routed to the expansion card. The expansion card takes all the data from all the input cards and transfers this information to all of the output chassis.

Each output chassis receives data from all of the input chassis and transfers that information into a large matrix. The matrix performs the routing function selecting when information is routed to each output card. The output cards in the output chassis take the data to recreate the associated input stream on the outputs of the router.

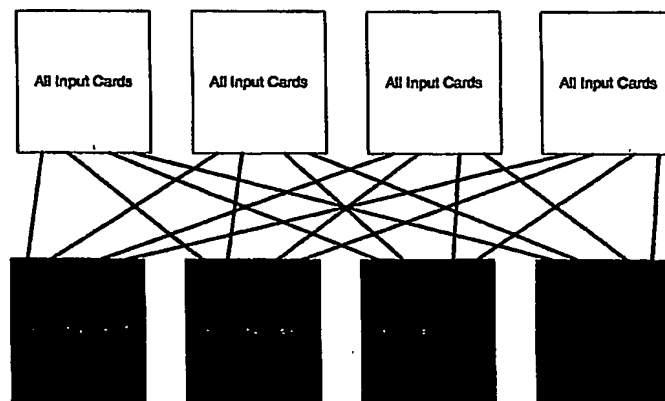


FIGURE 1 is an example of a system configured with the same number of inputs and outputs.

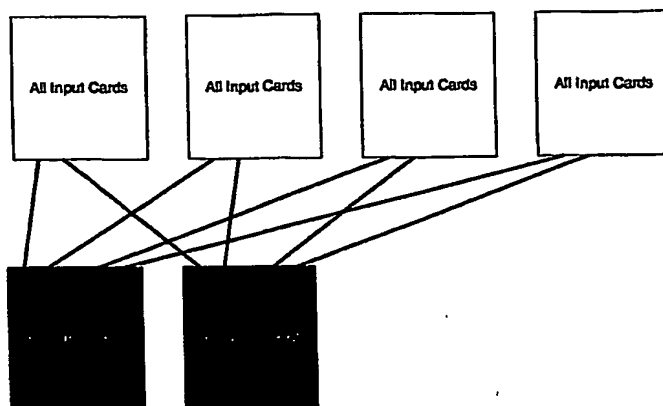


FIGURE 2 is an example of a system with many more inputs than outputs.

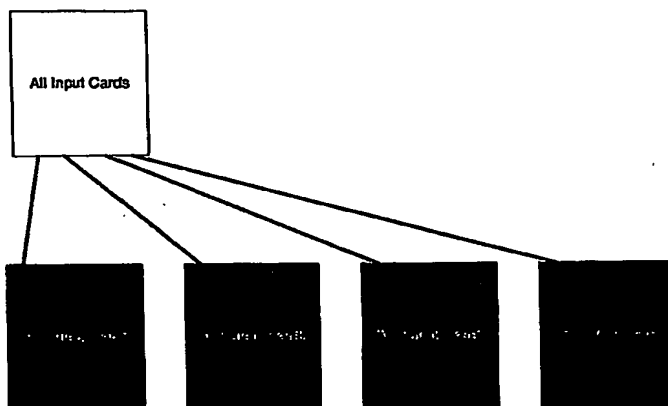


FIGURE 3 is an example of a system with many more outputs than inputs.